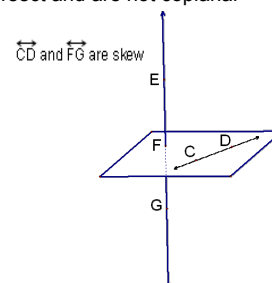
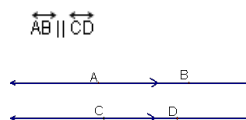


Chapter 3 Parallel and Perpendicular Lines

3-1 Identify Pairs of Lines and Angles

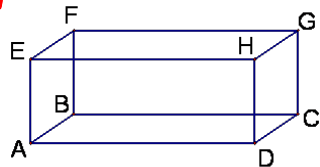
Parallel lines (\parallel)-coplanar lines that do not intersect

Skew lines -lines that do not intersect and are not coplanar

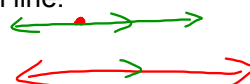


Parallel planes-planes that do not intersect

plane EFGH \parallel plane BCDA



Postulate 13 Parallel Postulate—If there is a line and a point not on the line, then there is exactly one line through the point parallel to the given line.



Postulate 14 Perpendicular Postulate-- If there is a line and a point not on the line, then there is exactly one line through the point perpendicular to the given line.

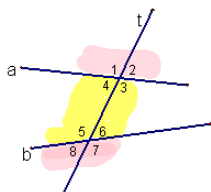


Angles formed by transversals.~~(Turn paper over to take notes on these angles)~~

Transversal--a line that intersects 2 or more coplanar lines at different points

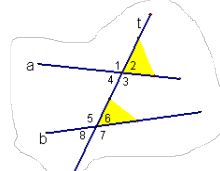
interior angles $\angle 3, \angle 4, \angle 5, \angle 6$

exterior angles
 $\angle 1, \angle 2, \angle 7, \angle 8$



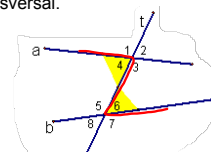
Corresponding Angles two angles that occupy corresponding positions.

$$\begin{aligned}\angle 2 &+ \angle 6 \\ \angle 5 &+ \angle 1 \\ \angle 4 &+ \angle 8 \\ \angle 3 &+ \angle 7\end{aligned}$$



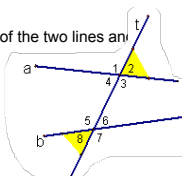
Alternate interior angles two angles that lie between the two lines and are on opposite sides of the transversal.

$$\begin{aligned}\angle 4 &+ \angle 6 \\ \angle 3 &+ \angle 5\end{aligned}$$



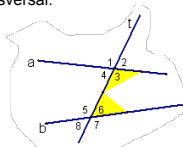
Alternate exterior angles two angles that are on the outside of the two lines and are on opposite sides of the transversal.

$$\begin{aligned}\angle 2 &+ \angle 8 \\ \angle 1 &+ \angle 7\end{aligned}$$



Consecutive (or Same-side) interior angles two angles that lie between the two lines and are on the same side of the transversal.

$$\begin{aligned}\angle 3 &+ \angle 6 \\ \angle 4 &+ \angle 5\end{aligned}$$



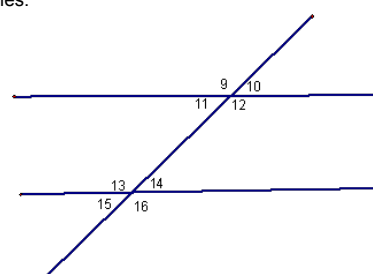
Interior angles: $\angle 11, \angle 12, \angle 13, \angle 14$ Exterior angles: $\angle 9, \angle 10, \angle 15, \angle 16$

Alternate interior angles: $\angle 11 + \angle 14$ Alternate exterior angles: $\angle 9 + \angle 16$

Consecutive interior angles (same-side interior): $\angle 12 + \angle 13$ $\angle 10 + \angle 15$

Corresponding angles: $\angle 12 + \angle 14$ $\angle 11 + \angle 13$

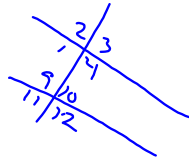
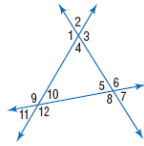
$$\begin{aligned}\angle 9 &+ \angle 13 \\ \angle 10 &+ \angle 14 \\ \angle 12 &+ \angle 16 \\ \angle 11 &+ \angle 15\end{aligned}$$



2. **FIND THE ERROR** Juanita and Eric are naming alternate interior angles in the figure at the right. One of the angles must be $\angle 4$.

Juanita	Eric
$\angle 4$ and $\angle 9$	$\angle 4$ and $\angle 10$
$\angle 4$ and $\angle 6$	$\angle 4$ and $\angle 5$

Who is correct? Explain your reasoning.



HW

p150-151

7-10, 18-25,

29-32